

Application No.: 10/764,499

Amendment to the Drawings:

Figure 1 has been amended to correct the margins. A Replacement Sheet containing amended Fig. 1 is attached to this response.

REMARKS

This amendment is filed in response to the Office Action dated February 23, 2006. Applicant submits that this application should be allowed and the case passed to issue. No new matter is introduced by this amendment, as the amendments are supported throughout the specification. Claims 1, 3, 5, 9, 12, 16, and 18 are amended to address informalities noted by the Examiner. In addition, the amendments to claims 1 and 16 are further supported by the Specification at page 5, lines 8-9 and 19; page 6, line 8; page 12, lines 26-27; page 13, lines 24-27; page 14, lines 22-24; page 18, lines 17-22; page 19, line 15; and Fig. 3.

Claims 1-25 are pending in this application. Claims 7-9, 19, and 20 have been withdrawn pursuant to a restriction requirement. Claims 1-6, 10-18, and 21-25 are rejected. Claims 9, 12, and 18 are objected to. Claims 1, 3, 5, 9, 12, 16, and 18 have been amended in this response.

Objection to the Drawings

The drawings were objected to because the margins on page 1 appear to be incorrect. This objection is traversed, and reconsideration and withdrawal respectfully requested. A Replacement Sheet containing amended Fig. 1 is attached.

Election of Species

Upon the allowance of a generic claim, Applicant requests rejoinder and examination of the withdrawn species claims, in accordance with 37 C.F.R. § 1.141.

Claim Objections

Claims 9, 12, and 18 were objected to as being of improper dependent form for failing to further limit the subject matter of a previous claim. This objection is traversed, and reconsideration and withdrawal thereof respectfully requested. Claims 9, 12, and 18 have been amended to address the informalities noted by the examiner.

Claim Rejections Under 35 U.S.C. § 112

Claims 13 and 23 were rejected under 35 U.S.C. § 112, first paragraph, as not being enabled. The Examiner alleged that Applicant is attempting to effectively gain coverage on an infinite number of materials that could be construed as reading on the claimed limitations and that Applicant recited a few examples. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The Examiner appears to be objecting to the breadth of the claims. However, a patentee is entitled to the full scope of its claim language absent a clear disavowal or contrary definition in the specification or the prosecution history. *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352 (Fed. Cir. 2004). A single disclosed embodiment can provide sufficient enablement of the claims, and it is improper to limit the claims to the preferred embodiments. *See Home Diagnostics, Inc.; Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898 (Fed. Cir. 2004).

Claim scope should be considered as a whole. *See* MPEP § 2164.08. Dependent claims 13 and 23 require all the limitations of the independent claims from which they depend. Independent claims 1 and 16 are enabled. Dependent claims 13 and 23 further limit claims 1 and 16, respectively. Therefore, the Examiner's allegation that "an infinite number of materials could be construed as reading on the claimed limitations" is traversed. The claimed seed layer is required to have a lowest interfacial energy with at least one of the magnetic layers when the magnetic layer has the desired out-of-plane crystal growth orientation. Claims 1 and 16 limit the magnetic layer and in doing so also limit the selection of seed layers that have a lowest interfacial energy with the magnetic layer.

Claims 1, 3, 5, 16, and 18 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because the term "substantially" is a relative term. These rejections are traversed, and reconsideration and withdrawal thereof respectfully requested.

It is believed that the term "substantially" as used in the instant claims is definite to one of ordinary skill in this art. However, in order to advance prosecution of this application, "substantially" has been deleted in claims 1, 3, 5, 9, 16, and 18. Applicant submits that the claims fully comport with the requirements of 35 U.S.C. § 112.

Claim Rejections Under 35 U.S.C. §§ 102 and 103

Claims 1-6, 13, 15-18, 23, and 25 were rejected under 35 U.S.C. § 102(e) as being anticipated by Ikeda et al. (U.S. Pat. No. 6,468,670). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the present invention, as claimed, and the cited prior art.

An aspect of the invention, per claim 1, is a laminated perpendicular magnetic recording medium comprising a non-magnetic substrate and at least a pair of polycrystalline, vertically stacked, spaced-apart perpendicular magnetic layers supported thereon. Each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the magnetic layers are not in vertical alignment with each other.

Another aspect of the invention, per claim 16, is a method of fabricating a laminated perpendicular magnetic recording medium comprising steps of providing a non-magnetic substrate having a surface and forming at least a pair of polycrystalline, vertically stacked, spaced-apart, perpendicular magnetic layers over the surface. Each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the layers are not in vertical alignment with each other.

The Examiner asserted that Ikeda et al. disclose a laminated perpendicular magnetic recording medium comprising a substrate and at least a pair of polycrystalline, vertically stacked, spaced-apart, perpendicular magnetic layers. The Examiner alleged that the magnetic layers have substantially the same preferred out-of-plane crystal growth orientation and that the magnetic layers are vertically uncorrelated.

Ikeda et al., however, do not anticipate the claimed laminated magnetic recording medium and method of fabricating a laminated perpendicular magnetic recording medium. Ikeda et al. disclose a pair of exchange coupled magnetic layers with strong perpendicular magnetic anisotropy. Ikeda et al., however, do not disclose that each of the magnetic layers has the **same preferred out-of-plane crystal growth orientation** and the grain boundaries of at least two of the **layers are not in vertical alignment** with each other, as required by claims 1 and 16.

The factual determination of lack of novelty requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 66 USPQ2d 1801 (Fed. Cir. 2003); *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002); *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Ikeda et al. do not disclose that each

of the magnetic layers has the **same preferred out-of-plane crystal growth orientation** and the grain boundaries of at least two of the **layers are not in vertical alignment** with each other, as required by claims 1 and 16, Ikeda et al. do not anticipate claims 1 and 16.

Applicant further submits that Ikeda et al. do not suggest the claimed laminated perpendicular magnetic recording medium and the method of fabricating a laminated perpendicular magnetic recording medium.

Claims 1-6, 10-18, and 21-25 were rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Applicant's admissions. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

Initially, it is noted that the Examiner has no basis for asserting that Applicant's alleged admissions constitute prior art under 35 U.S.C. § 102(b). Section 102(b) of 35 U.S.C. requires that the invention was patented or described in a printed publication, or in public use or on sale in this country **more than one year** prior to the date of the application. The Examiner has not shown that the invention was patented, described, in public use, or on sale for more than one year prior to the date of the application.

The claimed invention is further distinguishable over Applicant's admissions because Applicant has not admitted that a laminated perpendicular magnetic recording medium and a method of fabricating a laminated perpendicular magnetic recording medium comprising at least a pair of vertically stacked, spaced-apart perpendicular magnetic layers wherein each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the layers are not in vertical alignment with each other was conventional. Thus, Applicant's alleged admissions do not anticipate the claimed magnetic recording medium and method.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). There is no teaching, suggestion, or motivation in Applicant's admissions to modify the laminated perpendicular magnetic recording medium and the method of fabricating a laminated perpendicular magnetic recording medium so that each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the layers are not in vertical alignment, as required by independent claims 1 and 16.

The only teaching of the claimed laminated perpendicular magnetic recording medium and method of fabricating a laminated perpendicular magnetic recording medium wherein each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the layers are not in vertical alignment, as required by independent claims 1 and 16, is found in Applicant's disclosure. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 14 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeda et al. in view of Applicant's admissions. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The claimed laminated perpendicular magnetic recording medium and method of fabricating a laminated perpendicular magnetic recording medium is not obvious in view of the combination of Ikeda et al. and Applicant's admissions. As explained above, neither Ikeda et al. nor Applicant's admissions suggest that each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the layers are not in vertical alignment, as required by independent claims 1 and 16.

Claims 10 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeda et al. in view of Schatz et al. (WO 2002/21545) and Bertero et al. (U.S. Pat. No. 5,660,930). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The combination of Ikeda et al., Schatz et al., and Bertero et al. does not suggest the claimed laminated perpendicular magnetic recording medium and method of fabricating a laminated perpendicular magnetic recording medium because Schatz et al. and Bertero et al. do not cure the deficiencies of Ikeda et al. Schatz et al. and Bertero et al. do not suggest that each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the layers are not in vertical alignment, as required by independent claims 1 and 16.

Claims 11, 12, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeda et al. in view of Schatz et al. (WO 2002/21545) and Bertero et al. (U.S. Pat. No. 5,660,930), and further in view of Applicant's admissions. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The claimed laminated perpendicular magnetic recording medium and method of fabricating a laminated perpendicular magnetic recording medium is not obvious in view of the

combination of Ikeda et al., Schatz et al., Bertero et al., and Applicant's admissions. As explained above, neither Ikeda et al., Schatz et al., Bertero et al., nor Applicant's admissions suggest that each of the magnetic layers has the same preferred out-of-plane crystal growth orientation and the grain boundaries of at least two of the layers are not in vertical alignment, as required by independent claims 1 and 16.

The dependent claims are allowable for at least the same reasons as the independent claims from which they depend and further distinguish the claimed laminated perpendicular magnetic recording medium and method of fabricating a laminated perpendicular magnetic recording medium. For example, claim 3 further requires that the magnetic layers are comprised of the same materials. Claim 5 requires that the lattice parameters of the magnetic layers are the same. Claims 10 and 21 require that each of the magnetic layers is comprised of an *fcc* material having a $\langle 111 \rangle$ preferred out-of-plane growth orientation and a $[111]$ lattice parameter. Claims 13 and 23 require that a seed layer in contact with a lower surface of at least one of the magnetic layers comprises a material having a lowest interfacial energy with the at least one magnetic layer for when the latter has the desired preferred out-of-plane crystal growth orientation. The cited references do not suggest the claimed magnetic recording medium and method with these additional limitations.

In view of the above amendments and remarks, Applicant submits that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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